FIG.1

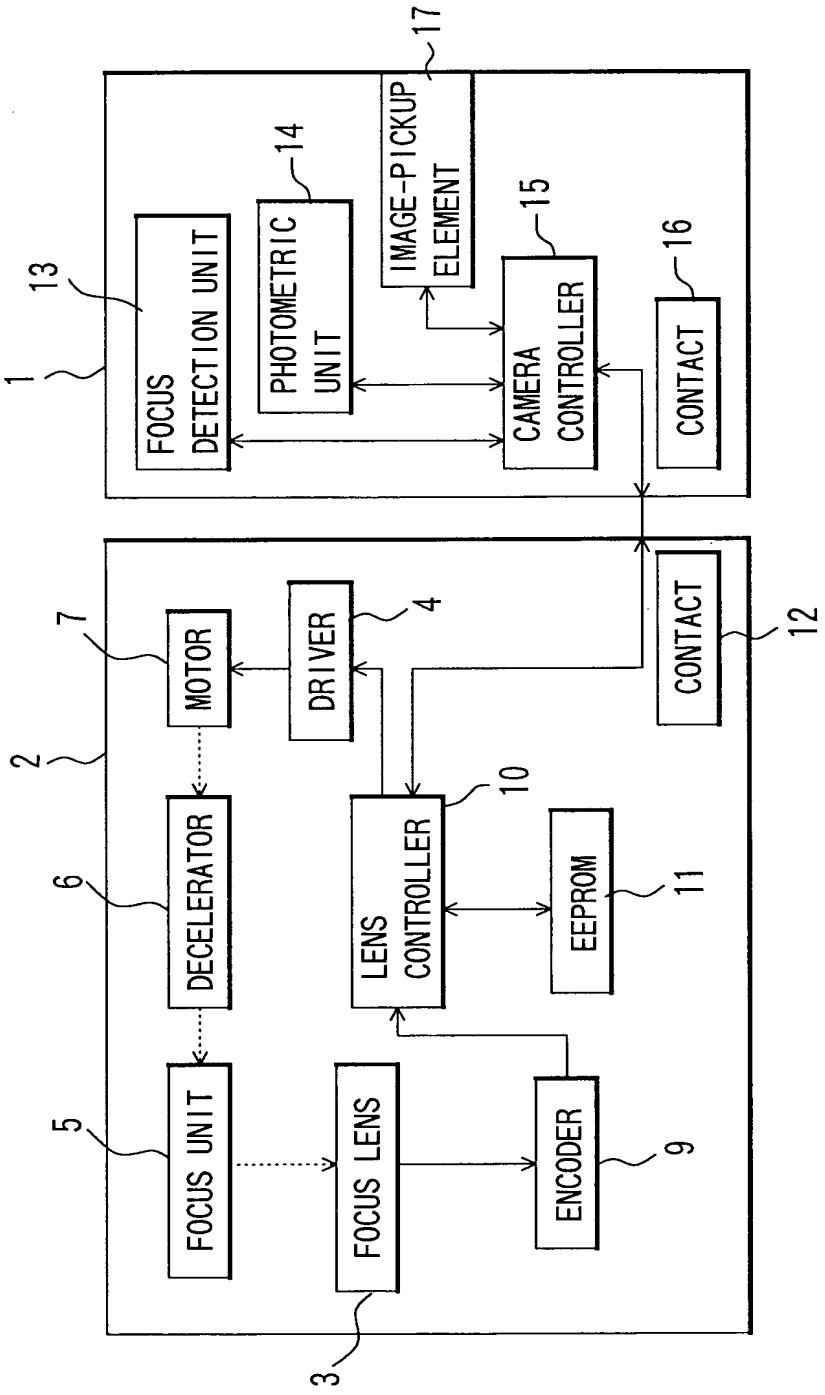

1
2
3
4
5
6
7
9
10
11
12
13
14
15
16
17
FOCUS DETECTION UNIT
PHOTOMETRIC UNIT
IMAGE-PICKUP ELEMENT
CAMERA CONTROLLER
CONTACT
MOTOR
DRIVER
CONTACT
DECELERATOR
LENS CONTROLLER
EEPROM
FOCUS UNIT
FOCUS LENS
ENCODER

FIG.2

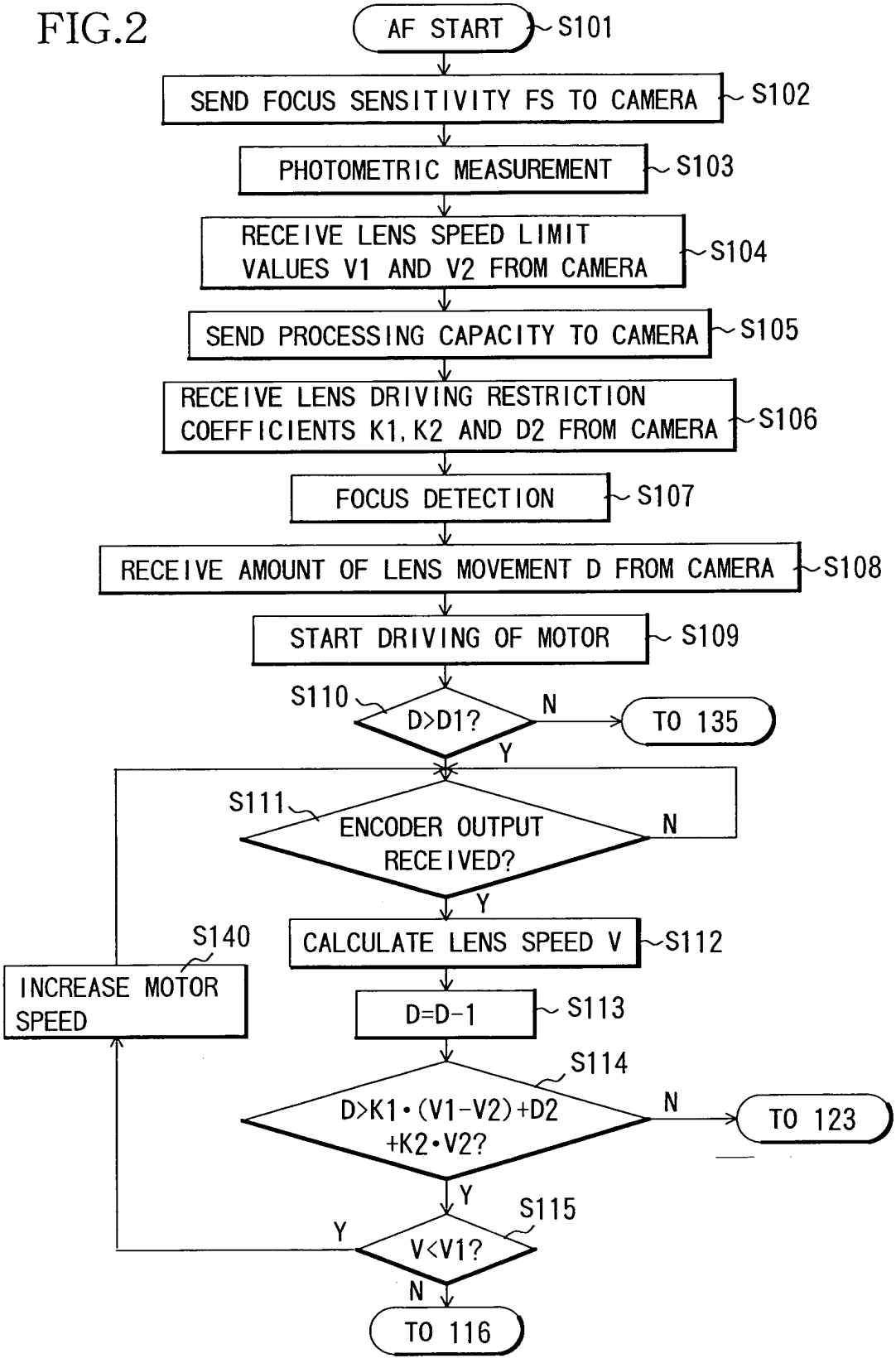

AF START
S101
SEND FOCUS SENSITIVITY FS TO CAMERA
S102
PHOTOMETRIC MEASUREMENT
S103
RECEIVE LENS SPEED LIMIT VALUES V1 AND V2 FROM CAMERA
S104
SEND PROCESSING CAPACITY TO CAMERA
S105
RECEIVE LENS DRIVING RESTRICTION COEFFICIENTS K1, K2 AND D2 FROM CAMERA
S106
FOCUS DETECTION
S107
RECEIVE AMOUNT OF LENS MOVEMENT D FROM CAMERA
S108
START DRIVING OF MOTOR
S109
S110
D>D1?
N
TO 135
Y
S111
ENCODER OUTPUT RECEIVED?
N
Y
S140
INCREASE MOTOR SPEED
CALCULATE LENS SPEED V
S112
D=D-1
S113
S114
D>K1•(V1-V2)+D2 +K2•V2?
N
TO 123
Y
S115
Y
V<V1?
N
TO 116

FIG.3

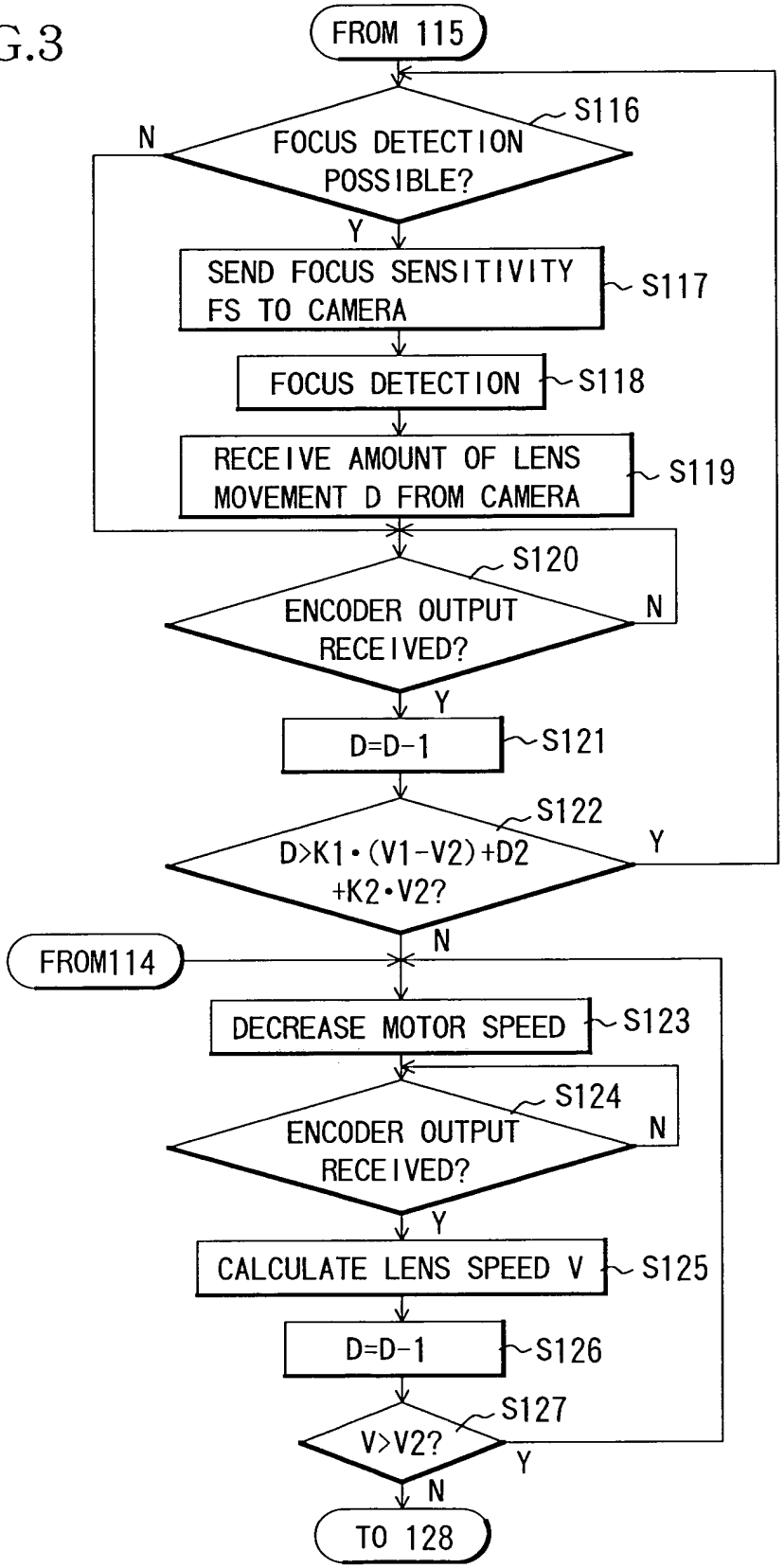

FROM 115
S116
FOCUS DETECTION POSSIBLE?
N
Y
SEND FOCUS SENSITIVITY FS TO CAMERA
S117
FOCUS DETECTION
S118
RECEIVE AMOUNT OF LENS MOVEMENT D FROM CAMERA
S119
S120
ENCODER OUTPUT RECEIVED?
N
Y
D=D-1
S121
S122
D>K1・(V1-V2)+D2 +K2・V2?
Y
N
FROM114
DECREASE MOTOR SPEED
S123
S124
ENCODER OUTPUT RECEIVED?
N
Y
CALCULATE LENS SPEED V
S125
D=D-1
S126
S127
V>V2?
Y
N
TO 128

FIG.4

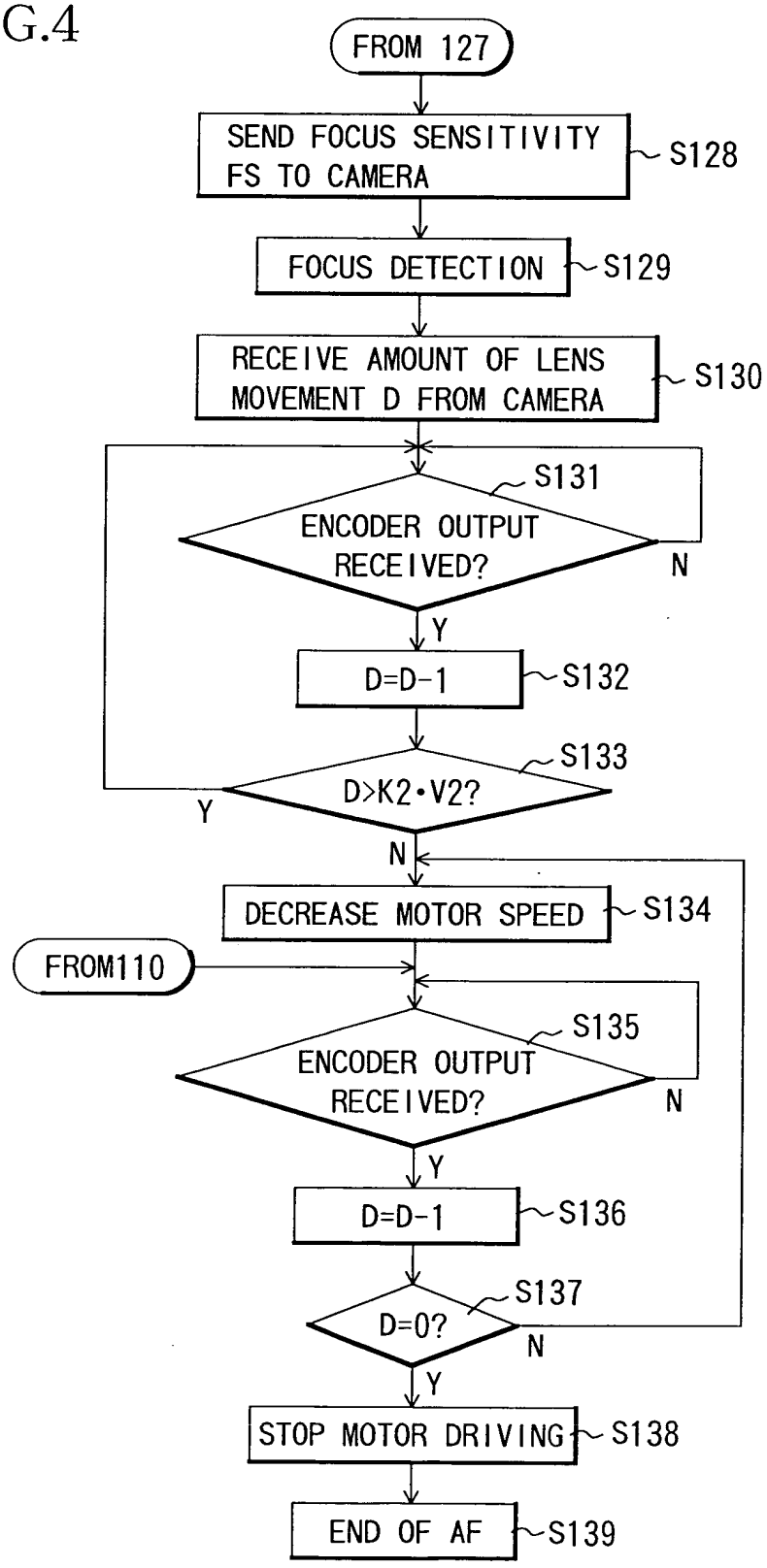

FROM 127
SEND FOCUS SENSITIVITY FS TO CAMERA
S128
FOCUS DETECTION
S129
RECEIVE AMOUNT OF LENS MOVEMENT D FROM CAMERA
S130
S131
ENCODER OUTPUT RECEIVED?
N
Y
D=D-1
S132
S133
D>K2•V2?
Y
N
DECREASE MOTOR SPEED
S134
FROM110
S135
ENCODER OUTPUT RECEIVED?
N
Y
D=D-1
S136
S137
D=0?
N
Y
STOP MOTOR DRIVING
S138
END OF AF
S139

FIG.5

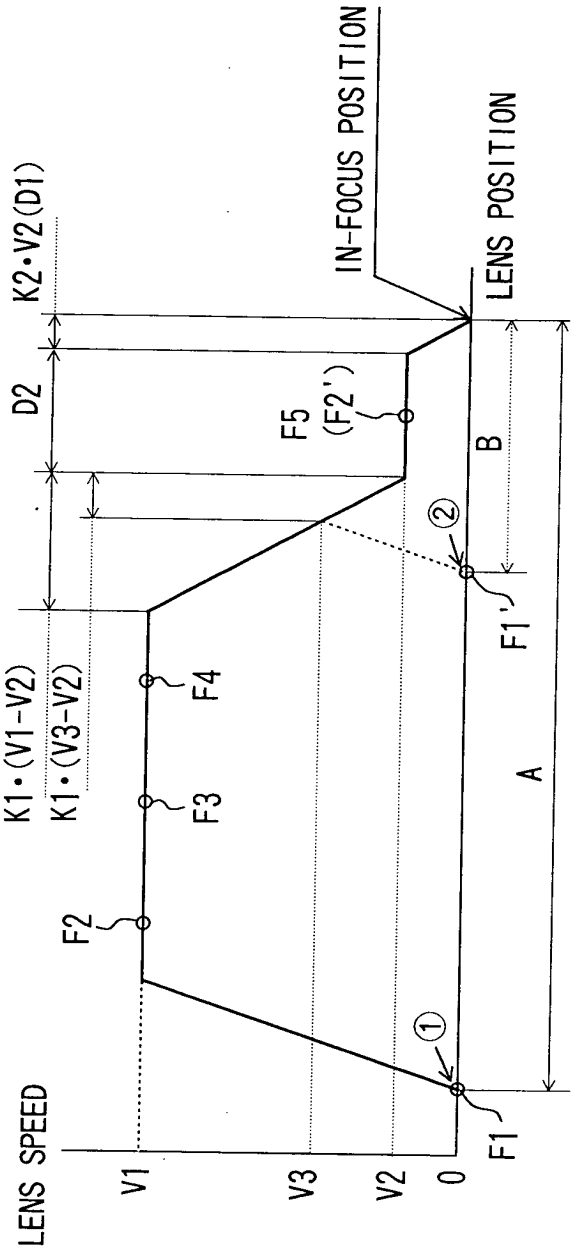
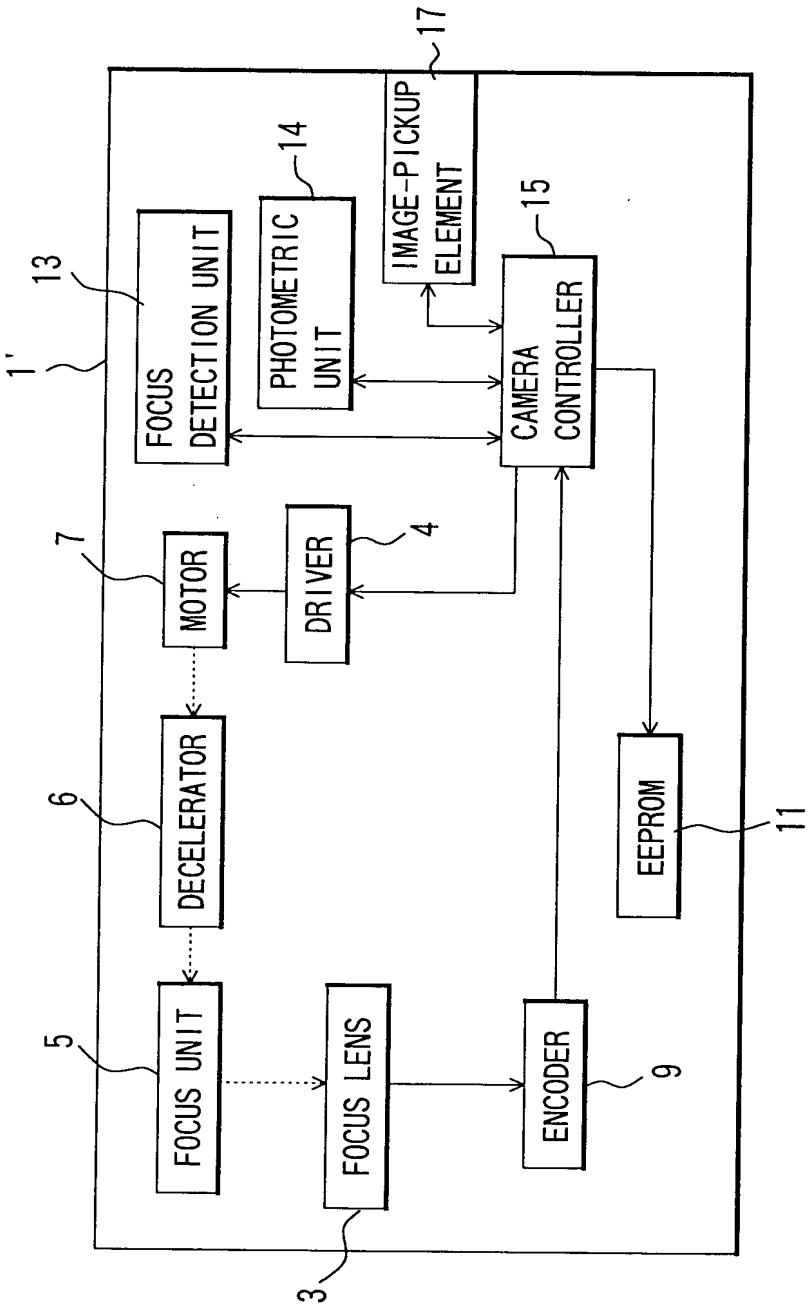

LENS SPEED
LENS POSITION
IN-FOCUS POSITION
V1
V3
V2
0
K2•V2(D1)
K1•(V1-V2)
K1•(V3-V2)
D2
F1
F2
F3
F4
F5
(F2')
F1'
A
B
①
②

FIG.6


1'
13
FOCUS DETECTION UNIT
14
PHOTOMETRIC UNIT
17
IMAGE-PICKUP ELEMENT
15
CAMERA CONTROLLER
7
MOTOR
DRIVER
4
6
DECELERATOR
EEPROM
11
5
FOCUS UNIT
FOCUS LENS
ENCODER
9
3